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(12) # EUROPEAN PATENT SPECIFICATION

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(54) **PARTITION PANEL SYSTEM.**

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Description

The present invention relates to partition panel system, intended to facilitate partitioning of restricted areas in larger premises, for example individual work areas in office landscapes.

Partition panels for the above stated purpose are previously known, comprising a supporting outer frame assembly, preferably manufactured from metal sections, arranged to support a flat sheet wall panel, painted in desired colour, or covered by a suitable material. In order to maintain a vertical direction of extension in relation to a floor surface, the lower end portions of the vertically extending supporting sections are, for example, arranged with transversely extending support members. Since it often is desirable to attach shelves or similar against the partition panels, the vertically extending supporting sections are usually arranged with equally spaced apertures, which can be used to engage supporting brackets attached to the shelves or any other elements to be supported by the partition panel.

US-A-4 158 936 discloses a sound insulating space dividing assembly of the above type, each panel comprising a pair of fibrous glass boards mounted in a generally rectangular frame, covered by finish fabric, each panel supported by a pair of supporting legs with a stabilizing foot extending transversely to the panels.

The above disclosed previously known type of partition panels are made with a certain panel height when manufactured, which can not be altered by a user. The possibility of attaching shelves, tops, cabinets and similar is based on the fact that such elements have a width extension substantially corresponding to the distance between the vertically extending supporting sections, since the supporting brackets utilized otherwise can not engage existing holes or apertures. Furthermore, the holes or apertures utilized for engagement with such supporting brackets are from aestethical point of view undesirable, and a nonperforated smooth outer surface would obviously be preferred. By covering such partition panels with a textile material, a certain sound absorbing effect is achieved, but since the textile material is applied directly against included flat sheet panel, the effect is small. It is further difficult to create a partition panel having a varied surface, e.g. with different materials or colours included in one specific partition panel.

The object of the present invention is to disclose a partition panel system, which removes all the above stated disadvantages related to previously known types of partition panels, and which facilitates simple and rapid erection, simple attachment of shelves, tops, cabinets and similar, having any desired extension in relation to the width of the partition panel. Included partition panels have good sound absorbing properties, and can also be varied in a most attractive fashion with regard to colour and shape. Furthermore, included supporting sections are completely without the perforations or holes previously utilized to facilitate attachment of furniture elements. The partition panel system according to the present invention is further extremely well suited for erection of reception desks or other specific and individually adapted work positions, and also facilitate further advantages, as disclosed in the following descriptive specification.

The partition panel system according to the present invention includes at least two from each other spaced longitudinally extending support sections, at a first end portion being arranged with a supporting member, intended to take up contact with a floor surface and to maintain a mainly vertical direction of extension for the support sections, said support sections being internally joined by means of at least one wall surface unit comprising a frameshaped member formed by an upper and a lower attachment member and two side members supporting at least one restricting outer surface, the upper member having a convex curved outer surface with a centrally located groove for securing a cover of textile material of said restricting surface by means of a stripshaped member located in said groove, and it is mainly characterised in that also the lower attachment member of each wall surface unit has a convex outer surface with a centrally located groove, thus forming substantially identical upper and lower surfaces at each wall surface unit, and that the opposed external surfaces of the support sections extending in the plane of the wall surface units form non-perforated closed outer surfaces, and that the restricting surface comprises a sheet of glass or plastics, preferably having light permeable properties, or said textile material, extending between the opposed grooves in the convex surfaces of the upper and lower attachment member, stretched and maintained in position by means of two stripshaped members, inserted into the grooves.

Examples of embodiments of a partition panel system according to the present invention are more fully described below with reference to the accompanying drawings, in which:-

Fig. 1 shows a perspective view of a part of an office landscape, including work positions divided from each other by means of a partition panel system according to the present invention.
Fig. 2 shows a perspective view of another work position, arranged utilizing a partition panel system according to the present invention, and arranged with suitable work heights, both for sitting and standing work.

Fig. 3 shows a plan view of a partition panel wall formed by means of three partition panels joined together, each one formed by three each other adjacently located units in vertical direction of extension.

Fig. 4 shows a sectional view in the horizontal plane of an embodiment of a supporting structure for a unit of the type utilized in Fig. 3 for forming a partition panel.

Fig. 5 shows a cross-sectional view in the vertical plane of the supporting structure shown in Fig. 4, and with certain included components located separated from said structure.

Fig. 6 shows a cross-sectional view corresponding to Fig. 5 of an embodiment of a complete unit.

Fig. 7 shows a perspective view of a portion of a unit included in a partition panel with an associated supporting bracket arranged supporting a shelf.

Fig. 8 shows a view, partly in cross-section, of the embodiment shown in Fig. 7.

Fig. 9 shows a plan view of a partition panel with glazed units.

Fig. 10 shows an example of a modified section intended to be used when building the units included in a partition panel.

Fig. 11 shows an example of a supporting section for the units forming a partition panel, shown in cross-section.

Fig. 12 shows a view corresponding to Fig. 11 of an example of a supporting section, intended to serve as the outermost section of a partition panel, and with the units forming a partition panel attached thereto.

With reference to Figs. 1 and 2, examples are shown relating to how a partition panel system according to the present invention can be used in practice. Shown embodiments of partition panels include vertically extending supporting sections 1, 1', 1'', having the lower end portions arranged with transversely extending supporting members 2, 2', 2'', which are in contact with a floor surface. The supporting sections 1, 1', 1'' are utilized for attachment of intermediately located units 3, 3', 3'', located above each other and forming a wall surface, which is also shown in Fig. 3, where three such units 3, 3', 3'' are located above each other between each supporting section 1, 1', 1''.

The units 3, 3', 3'' utilized to form a wall surface are more fully described with reference to the example of an embodiment shown in Figs. 4 and 5. This example shows that each unit 3, 3', 3'' includes a centrally located plate-shaped member 4, located in grooves taken up both in an upper and a lower attachment member, 5 and 5' respectively, but also in two side members, 6 and 6' respectively. The upper and the lower attachment members 5, 5' are arranged with a substantially semi-circular cross-sectional configuration, and having the convex surfaces directed away from the plate-shaped member 4. A centrally located longitudinally extending groove 7, 7' is taken up in said convex surfaces, against which two strips, 8 and 8' respectively, can be attached, e.g. by means of nails, screws or similar. The grooves 7, 7' are arranged with a depth, and preferably also a width, exceeding the cross-sectional dimensions of the strips 8, 8'.

A cross-sectional view of a complete unit 3, 3', 3'' is shown in Fig. 6, but the strips 6, 6' have not been shown. Said complete unit includes, apart from previously described elements, also a filling member 9, 9' at each side of the centrally located plate-shaped member 4, and an outer layer 10 surrounding the unit, preferably being a textile material. The filling members 9, 9' comprises advantageously of mineral wool panels, but also other materials can obviously be used, such as various types of rubber and plastic materials, as well as other materials having suitable properties. In order to facilitate required stretching of the enclosing layer 10 of cloth or similar, same is stretched by attachment of previously mentioned strips 8, 8' against the bottom parts of the grooves 7, 7' (not shown).

Said grooves 7, 7' are also utlized for attachment of shelves, tops, cabinets or other pieces of furniture against a partition panel according to the invention. An example of how such attachment is carried out will now be more fully described with reference to Figs. 7 and 8, which intend to disclose attachment of a shelf 11. For this purpose, supporting brackets are used, formed by a first strip-shaped member 12, which by means of a bent over portion engages adjacent side portion of a groove 7. The strip-shaped member is preferably arranged having an extension substantially corresponding to the convex shape of the upper portion of the unit 3 against which attachment is to be performed, and it is transformed into a part 13 directed away from said unit 3, arranged to facilitate attachment against the shelf 11. It is obvious, that the supporting brackets can be located at any desired locations along the entire longitudinal length of each unit 3, 3', 3'', and that thus shelves or other pieces of furniture, having a considerably shorter extension than the units 3, 3', 3'', can be attached. Attachment of very long pices of furniture can obviously also be performed, by using required number of supporting brackets, and by attaching same against a number of units 3, 3', 3'', located subsequently following each other at a partition panel erected according to the invention.

The units 3, 3', 3'' utilized to erect partition panel sections are further advantageously arranged

having independently different heights, e.g. with the lowermost unit having a height adapted for attachment of a writing top or similar at desk height, and with subsequently following joints in direction upwards utilized for attachment of, for example, shelves. The uppermost unit 3, 3', 3'' can be utilized to support a top forming a desk surface extending in both directions from said unit 3, 3', 3'', e.g. a reception desk as shown in Fig. 2.

With regard to described embodiments, the upper and lower attachment member 5, 5' are shown having a solid cross-section, e.g. manufactured from wood, but also a non-solid cross-section can obviously be used. An example of this is shown in Fig. 10, and may advantageously be manufactured from a synthetic plastics material. The strip 8 used to hold and stretch the cloth forming a surrounding layer 10 can be attached without use of screws, nails or similar, by arranging the groove 7 with engagement means protruding from the side surfaces, which engage and hold the strip 8 in a position inserted into the groove 7.

Furthermore, partition panels including glazed sections can also be accomplished, in which case the plateshaped member 4 is replaced by a sheet of plate glass 14, as shown in Fig. 9. In this case, the surrounding layer 10 of cloth or similar is obviously not used, nor any filling elements 9, 9'. The latter elements 9, 9' may also for certain applications advantageously be excluded from embodiments including a surrounding layer 10 of cloth or similar.

The method for attaching the units 3, 3', 3'' against the vertically extending supporting sections 1, 1', 1'' has previously not been discussed, nor the fashion in which said sections 1, 1', 1'' can be designed. An example of such a supporting section 1, 1', 1'' is shown in Fig. 11, intended to serve as an example of a section 1, 1', 1'' arranged to be used as an intermediately located section between two elements of a partition panel. Said section includes two grooves 15, 15', having the open portions restricted by means of two towards each other extending parts. The inside surfaces of these two restricting parts are utilized as contact surfaces for attachment means insertable into the grooves 15, 15', which are joined to the side members 6, 6', extending outwardly from same. An example of a supporting section 1, 1', 1'', intended to serve as an outer section restricting the extension of a partition panel, is shown in Fig. 12, and with an example of an attachment means 16 indicated, arranged to hold a unit 3 against the section. The attachment means 16 may in its simpliest form comprise of a screw or a bolt, the head of which is used to obtain contact against the internal surfaces of the towards each other extending parts at the opening of the groove 15. In view of the large number of previously known means which facilitate attachment against grooves 15, 15' of disclosed type, further examples are not considered as required.

The examples of supporting sections 1, 1', 1'' disclosed above can obviously be further varied, and for example can the number of grooves 15, 15' be further increased, e.g. to accomplish a T-shaped partition panel, three grooves 15, 15' can be arranged, two in an opposed relationship and a third located in a rotated relationship to the other two grooves, in which case said rotated relationship obviously does not need to be 90º. Furthermore, crosswise connection of partition panels can also be accomplished, in which case the number of grooves is increased to four.

The units 3, 3', 3'' utilized for erecting a partition panel may further be arranged having a non-linear extension, in order to facilitate erection of curved partition panels, and this has been indicated in Fig. 2, in which the reception desk shown includes such curved units 3, 3', 3'', which can be arranged having any desired selected angular extension for the curved sections.

The layer 10, previously mentioned as preferably being cloth or other textile material, can obviously also be other materials, and in this respect also rigid plate-shaped materials. By arranging the outer edge portions of the upper and the lower attachment members 5, 5', and also associated side members 6, 6', with a recess, and a rigid plate-shaped member may for example be attached abutting the recess, the depth of which preferably is arranged to correspond with the thickness of the plate-shaped member. Alternatively, and for example, a metal sheet or similar, having bent over edge portions, can be directly attached against the towards each directed surfaces of the attachment members 5, 5' and the side members 6, 6'. It is thus possible to accomplish partition panel units having side surfaces of a substantially rigid material, such as sheet metal, synthetic plastics, wood or any other desired material.

It is also possible, for example as a lower section, to utilize a unit having one or a number of channels for electric or telecommunication wires, and with necessary apertures for attachment of connection means. Furthermore, a covering profile is advantageously arranged attachable against the upper groove 5, 5' of a partition panel, having an outer convex surface matching the upper surface of the partition panel.

The partition panel system according to the present invention makes it possible to vary the appereance of a partition panel in a previously unknown way, both with regard to shape and colour, since it makes it possible to erect as desired a partition panel of units 3, 3', 3'' having from each other different height and colour. Furthermore, rap-

id and simple attachment of various pieces of furniture can be carried out, completely independent of the longitudinal length of same. The partition panel according to the present invention can thus be regarded as a system for building desired interior, and with possibility to meet all requirements relating to functional work positions. A partition panel according to the present invention can further be erected in a rapid and simple fashion, or demounted, and it may further be designed to meet a variety of requirements relating to sound absorbing properties.

Claims

1. Partition panel system, including at least two from each other spaced longitudinally extending support sections (1, 1', 1''), at a first end portion being arranged with a supporting member (2, 2'), intended to take up contact with a floor surface and to maintain a mainly vertical direction of extension for the support sections (1, 1', 1''), said support sections being internally joined by means of at least one wall surface unit (3, 3', 3'') comprising a frameshaped member (5, 5', 6, 6') formed by an upper and a lower attachment member (5, 5') and two side members (6, 6') supporting at least one restricting outer surface (4; 10; 14), the upper member (5) having a convex curved outer surface with a centrally located groove (7) for securing a cover of textile material of said restricting surface by means of a stripshaped member located in said groove (7), characterised in that also the lower attachment member (5') of each wall surface unit (3, 3', 3'') has a convex outer surface with a centrally located groove (7'), thus forming substantially identical upper and lower surfaces at each wall surface unit (3, 3', 3''), and that the opposed external surfaces of the support sections (1, 1', 1'') extending in the plane of the wall surface units (3, 3', 3'') form non-perforated closed outer surfaces, and that the restricting surface (4; 10; 14) comprises a sheet of glass or plastics (14), preferably having light permeable properties, or said textile material, extending between the opposed grooves (7, 7') in the convex surfaces of the upper and lower attachment member (5, 5'), stretched and maintained in position by means of two stripshaped members (8, 8'), inserted into the grooves (7, 7').

2. Partition panel system according to claim 1, characterised in that one or a number of supporting brackets (12, 13) are arranged to take up contact with the wall surface units (3, 3', 3'') by their upper portions, engaging with existing groove (7, 7') by an associated attachment member.

3. Partition panel system according to claim 1 or 2, characterised in that the upper groove (7, 7') of the uppermost located wall surface unit (3, 3', 3'') is arranged to be attached to, and to support, a plateshaped member, extending in a transverse relationship to the plane of the partition panel, and extending in at least one direction from said plane.

4. Partition panel system according to any of claims 1 - 3, characterised in that a number of wall surface units (3, 3', 3''), lopcated between two associated support sections (1, 1', 1''), are arranged with from each other different extension in height and/or different colour or design.

5. Partition panel system according to any of claims 1 - 4, characterised in that the wall surface units (3, 3', 3'') are arranged having a curved line of extension.

Patentansprüche

1. Trennplattensystem mit zumindest zwei voneinander beabstandeten, sich in Längsrichtung erstreckenden Trägerbereichen (1,1',1'') welche an einem ersten Endbereich mit einem Lagerelement (2,2') versehen sind, welches in Kontakt mit einer Bodenfläche bringbar ist und mit Hilfe dessen eine im wesentlichen vertikale Erstreckungsrichtung für die Trägerbereiche (1,1',1'') beibehalten werden kann, wobei die Trägerbereiche untereinander durch zumindest eine Wandflächeneinheit (3,3',3'') verbunden sind, welche ein rahmenartiges Bauteil (5,5',6,6') umfaßt, welches von einem oberen und einem unteren Befestigungsbauteil (5,5') und zwei Seitenbauteilen (6,6') gebildet wird, welche zumindest eine begrenzende äußere Oberfläche (4;10;14) lagern, wobei das obere Bauteil (5) eine konvex gebogene äußere Oberfläche mit einer zentrisch angebrachten Nut (7) aufweist, um eine Abdeckung aus textilem Material der begrenzenden Oberfläche mittels eines streifenartigen Bauelementes, welches in der Nut (7) angeordnet ist, zu sichern, dadurch gekennzeichnet, daß auch das untere Befestigungsbauteil (5') jeder Wandflächeneinheit (3,3',3'') eine konvexe äußere Oberfläche mit einer zentrisch angeordneten Nut (7') aufweist, um auf diese Weise im wesentlichen identische obere und untere Oberflächen an jeder Wandflächeneinheit (3,3',3'') auszubilden, und daß die gegenüberliegenden

äußeren Oberflächen der Trägerbereiche (1,1',1''), welche sich in einer Ebene der Wandflächeneinheiten (3,3',3'') erstrecken nicht perforierte geschlossene äußere Oberflächen bilden und daß die begrenzende Fläche (4;10;14) zumindest eine Scheibe aus Glas oder Plastik (14) umfaßt, bevorzugterweise mit lichtdurchlässigen Eigenschaften, oder das textile Material, wobei sich die Oberfläche zwischen den gegenüberliegenden Nuten (7,7') in den konvexen Oberflächen des oberen und des unteren Befestigungsbauteiles (5,5') erstreckt und mittels zweier streifenförmiger Bauteile (8,8'), welche in die Nuten (7,7') eingeführt sind, gespannt und in der Stellung gehalten wird.

2. Trennplattensystem nach Anspruch 1, dadurch gekennzeichnet, daß eine oder eine Anzahl von Lagerstützen (12,13) vorgesehen sind, um mit ihren oberen Bereichen mit den Wandflächeneinheiten (3,3',3'') in Kontakt zu stehen, wobei sie mit der bestehenden Nut (7,7') durch ein zugeordnetes Befestigungselement in Eingriff sind.

3. Trennplattensystem nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die obere Nut (7,7') der zu oberst angeordneten Wandflächeneinheit (3,3',3'') so angeordnet ist, daß sie mit einem plattenförmigen Bauteil verbunden werden und dieses lagern kann, welches sich in Querrichtung bezüglich der Ebene der Trennwand erstreckt und sich in zumindest einer Richtung von der Ebene weg erstreckt.

4. Trennplattensystem nach einem der Ansprüche 1 - 3, dadurch gekennzeichnet, daß eine Anzahl von Wandflächeneinheiten (3,3',3''), welche zwischen zugeordneten Trägerbereichen (1,1',1'') angeordnet sind, in einer zueinander unterschiedlichen Höhenerstreckung und/oder unterschiedlicher Farbe oder Ausgestaltung angeordnet sind.

5. Trennplattensystem nach einem der Ansprüche 1 - 4, dadurch gekennzeichnet, daß die Wandflächeneinheiten (3,3', 3'') so angeordnet sind, daß sie eine kurvenförmige lineare Ausdehnung aufweisen.

Revendications

1. Système de panneaux de cloisonnement, comprenant au moins deux sections de support s'étendant longitudinalement et espacées l'une de l'autre (1, 1', 1''), avec agencement à une première partie extrême d'un élément de support (2, 2'), destiné à prendre contact avec une surface de sol et à maintenir une direction essentiellement verticale d'extension pour les sections de support (1, 1', 1''), ces sections de support étant réunies intérieurement par au moins une unité formant surface de paroi (3, 3', 3'') comprenant des éléments d'ossature (5, 5', 6, 6') formés par des éléments de fixation supérieur et inférieur (5, 5') et deux éléments latéraux (6, 6') supportant au moins une surface extérieure de délimitation (4; 10; 14), l'élément supérieur (5) présentant une surface externe de courbure convexe avec une rainure centrale (7) destinée à la fixation d'un revêtement de matière textile sur cette surface de délimitation, grâce à un élément en forme de languette localisé dans cette rainure (7), caractérisé en ce que l'élément de fixation inférieur (5') de chaque unité formant surface de paroi (3, 3', 3'') présente également une surface externe convexe avec une rainure centrale (7'), en formant ainsi des surfaces supérieure et inférieure essentiellement identiques à chaque unité formant surface de paroi (3, 3', 3''), en ce que les surfaces externes opposées des sections de support (1, 1', 1'') s'étendant dans le plan des unités formant surfaces de paroi (3, 3', 3'') forment des surfaces externes fermées, non perforées, et en ce que la surface de délimitation (4; 10; 14) comprend une plaque de verre ou de matière plastique (14), ayant de préférence des propriétés de perméabilité à la lumière, ou bien la matière textile précitée s'étendant entre les rainures opposées (7, 7') des surfaces convexes des éléments de fixation supérieur et inférieur (5, 5'), cette matière textile étant étirée et maintenue en place grâce à deux éléments formant languettes (8, 8') introduits dans les rainures (7, 7').

2. Système de panneaux de cloisonnement suivant la revendication 1, caractérisé en ce qu'une ou un certain nombre de consoles de support (12, 13) sont agencées pour entrer en contact avec les unités formant surfaces de paroi (3, 3', 3'') par leurs parties supérieures, en coopérant avec une rainure existante (7, 7') par un élément de fixation associé.

3. Système de panneaux de cloisonnement suivant la revendication 1 ou 2, caractérisé en ce que la rainure supérieure (7) de l'unité de surface de paroi (3, 3', 3'') qui est située dans la position la plus élevée est agencée pour être attachée à un élément en forme de plateau et pour supporter celui-ci, cet élément s'étendans transversalement au plan du panneau de cloisonnement et dans au moins une

direction à partir de celui-ci.

4. Système de panneaux de cloisonnement suivant l'une quelconque des revendications 1 à 3, caractérisé en ce qu'un certain nombre des unités formant surfaces de paroi (3, 3', 3'') localisées entre deux sections de support associées (1, 1', 1'') sont agencées pour présenter des extensions différentes en hauteur et/ou une couleur ou un dessin différent.

5. Système de panneaux de cloisonnement suivant l'une quelconque des revendications 1 à 4, caractérisé en ce que les unités formant surfaces de paroi (3, 3', 3'') sont agencées de manière à présenter une ligne d'extension courbe.

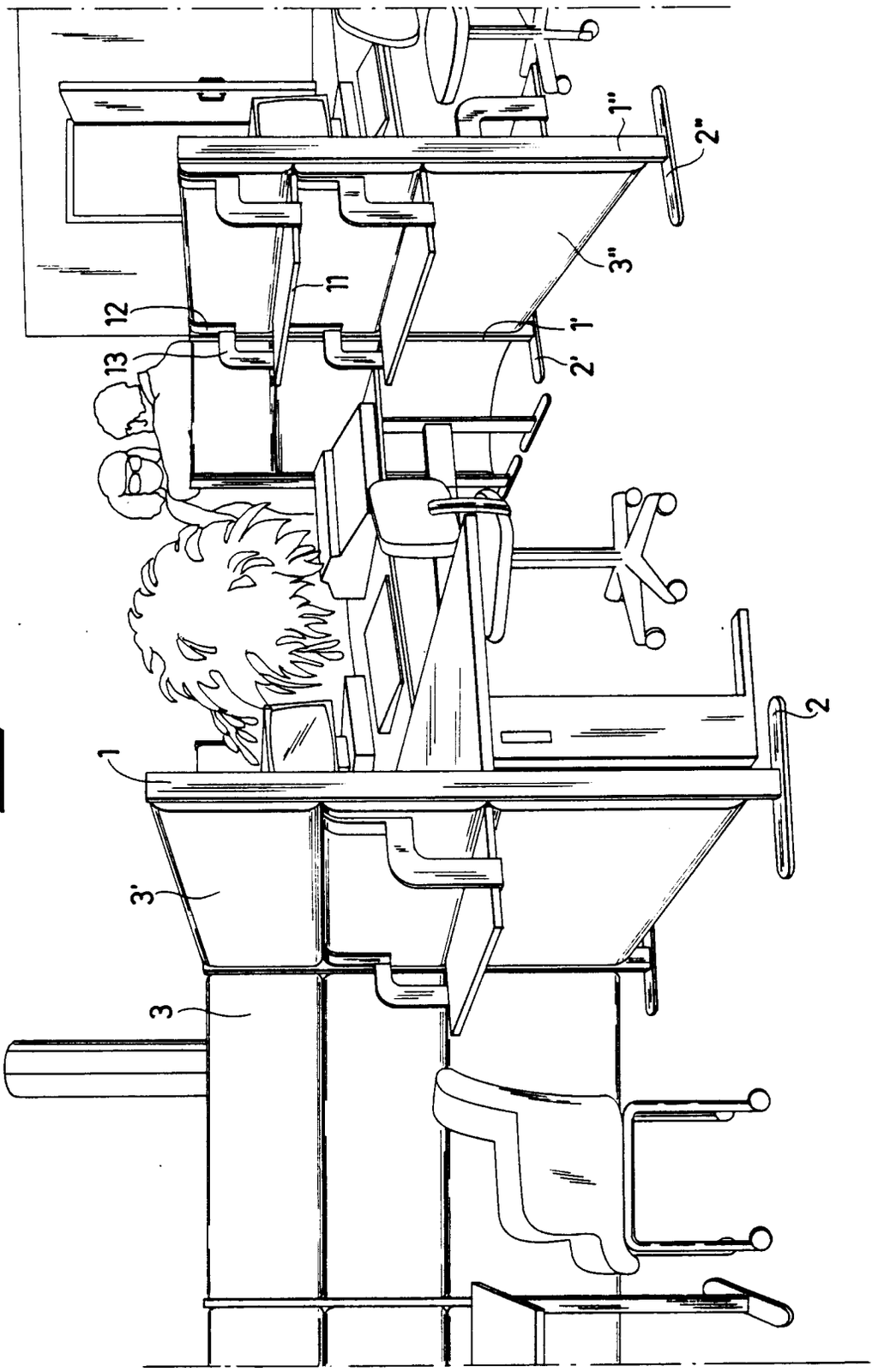

Fig. 7

Fig. 2

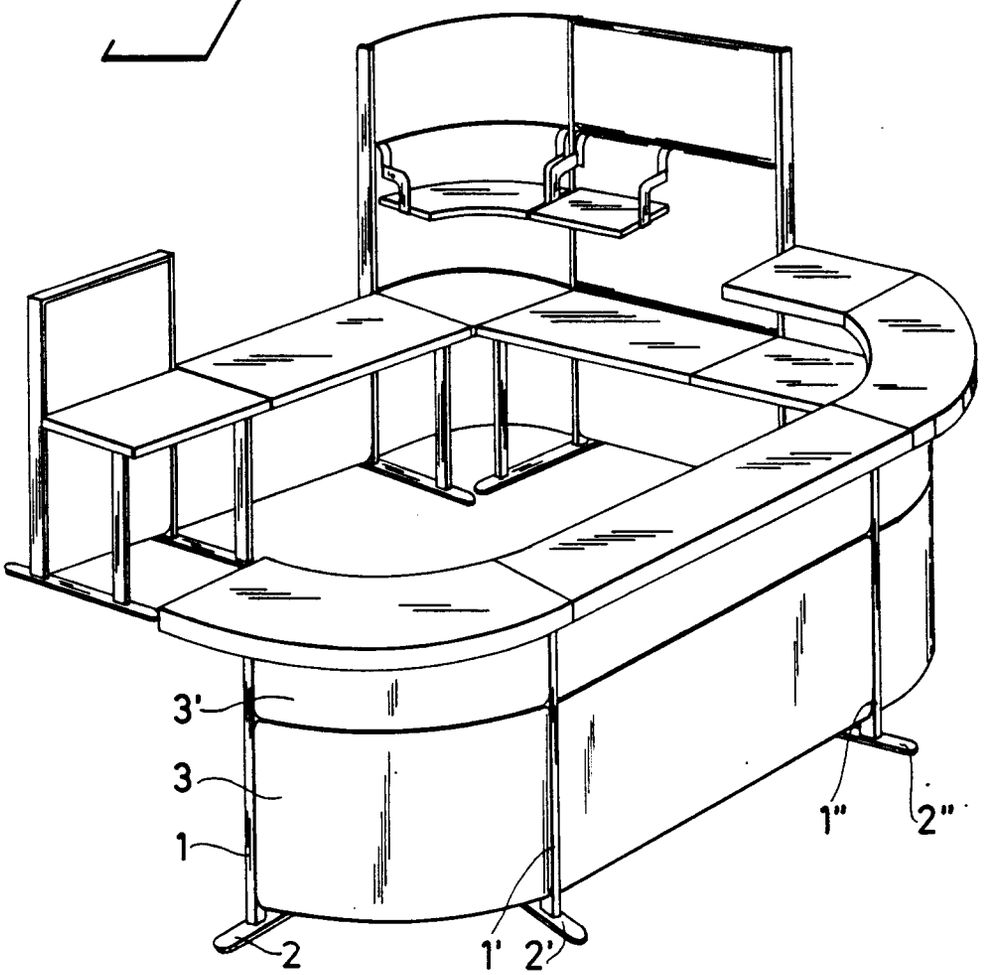

Fig. 3

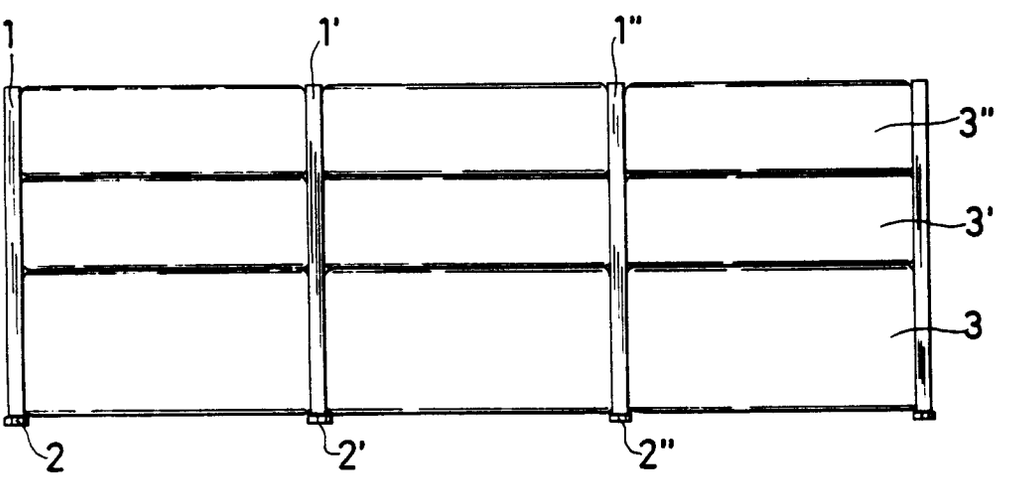

Fig. 4

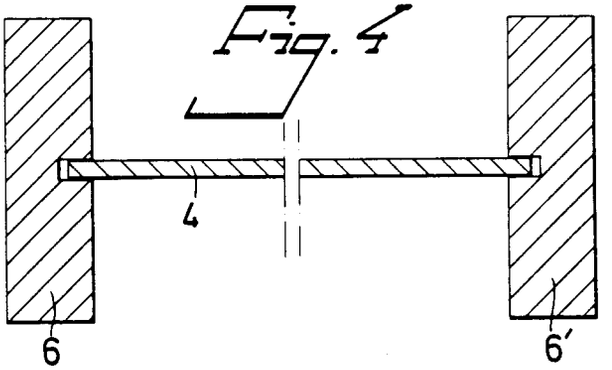

Fig. 5

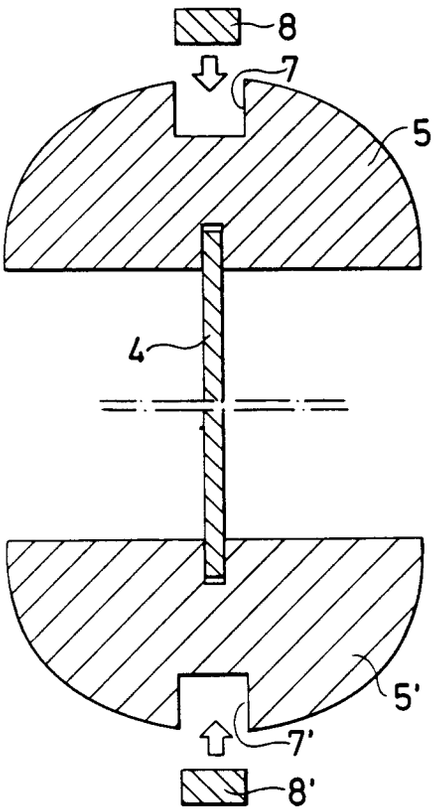

Fig. 6

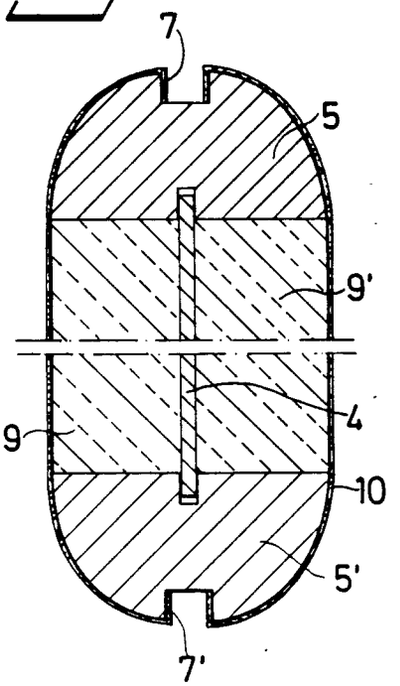

Fig. 7

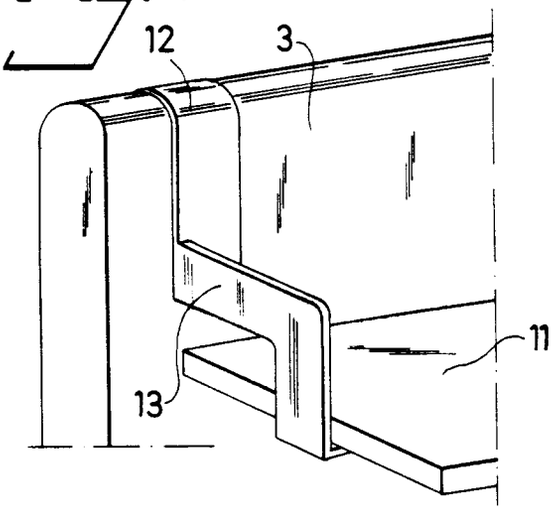

Fig. 8

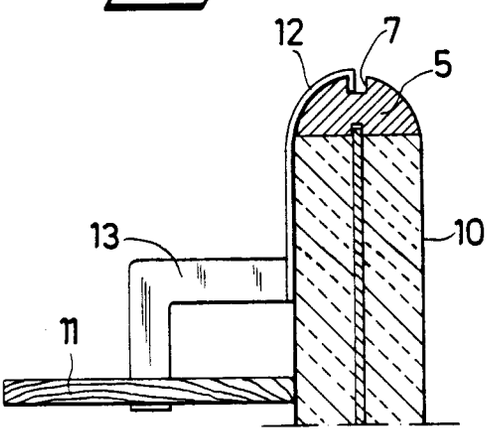

Fig. 9

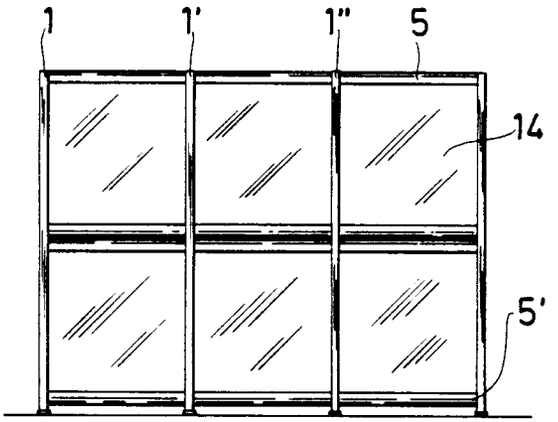

Fig. 10

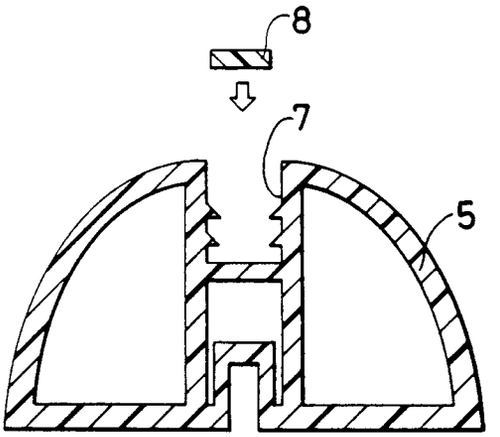

Fig. 11

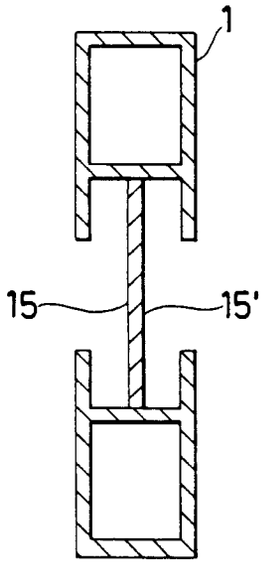

Fig. 12